

Original Article

Fertility Desires of Women Following Manual Vacuum Aspiration for Incomplete Abortion at the University Teaching Hospital, Lusaka

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ABSTRACT

Objectives: To explore and determine the fertility desires of women who underwent Manual Vacuum Aspiration (MVA) procedure for the management of incomplete abortion at The University Teaching Hospitals (UTH) Women and new born hospital emergency gynaecology ward.

Methods: An unmatched case control study design with 142 women who had undergone an MVA enrolled into the study while the 142 controls were sampled from women attending the antenatal clinic with pregnancies below age of viability. Systematic random sampling with a sampling interval of 5 was used to select both cases and controls. Data was collected using an investigator-administered questionnaire. Association between fertility desire (birth interval) and demographic and socioeconomic factors was determined by bivariate analysis. Odds ratios were used to determine statistical significance. Associations with a p-value of <0.05 were further analyzed by multivariate logistic regression.

Results: Logistic regression showed that post-MVA most women would like to wait for 2 years or more before the next pregnancy ($p<0.001$). Multivariate

analysis model after adjusting for confounders also showed that exposure to MVA procedure was a statistically significant factor ($p<0.001$, 95%CI 2.281, 14.153) associated with determining future fertility desire. In bivariate analysis, statistically significant factors included residence, religion, having experienced a miscarriage before and type of contraceptive method chosen after counseling. On average 50% of the cases of abortions were incomplete abortions with most of them managed with MVA procedure and experiences by the women post-MVA were different. Of the 142 women who underwent MVA, 56 described the pain as severe with 89 accepting to undergo a similar procedure in future should need arise while 53 would not. Ninety women preferred to wait for more than two years before the next pregnancy while 45 wanted to try for another pregnancy earlier, which is in conflict with the options for contraception, more preferred short acting methods.

Conclusion: Manual Vacuum Aspiration had a negative effect on preferred birth interval, with a significant number of women post MVA desiring to wait two or more years before the next pregnancy despite the poor outcome of the index pregnancy. Most of the women cited the pain and the discomfort from the procedure as the main reason for the preferred birth interval. Other independent variables

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Keywords: fertility desire, Manual vacuum aspiration, incomplete abortion

that affected fertility desire included residence, religion and also level of education.

INTRODUCTION

Abortions are of major public health concern as they contribute to the high maternal mortality ratio in Zambia which stands at 398 per 100,000 live births (ZDHS 2014, WHO 2016). Globally abortions contribute 13% to the maternal mortality rate while in Zambia close to 30% of maternal deaths are attributed to abortions. Throughout the world, approximately 210 million women become pregnant each year and over 135 million of these women deliver live infants while the remaining 75 million pregnancies end up as stillbirths or spontaneous or induced abortions (WHO 2011). Manual vacuum aspiration is a surgical procedure used for the management of incomplete abortion regardless of whether the abortion is spontaneous or induced. In a study done in the USA by Edwards et al. (2007), comparing patient acceptability of MVA versus electric vacuum aspiration (EVA), patients who accepted EVA had a better pain experience compared to those who underwent an MVA procedure, hence among the MVA group, only a few indicated that they would recommend the procedure to others mainly due to the severe pain experienced. In a study by Bique et al. (2007) in Mozambique, MVA procedure was successful in almost 100% of clients and the women reported fewer side effects but higher pain scores. Women also cited lack of privacy as one of the disadvantages of the MVA procedure (Edward et al. 2007).

Anecdotal evidence from the emergency gynaecology ward at the University Teaching Hospital (UTH), from January to December, 2015, showed that 4035 manual vacuum aspirations (MVAs) were done for management of incomplete abortion. This proved the high burden of incomplete abortions and that many women undergo the MVA procedure on a daily basis. The UTH at the time of the study was attending to almost all the incomplete

abortions as women were referred from most local clinics within Lusaka province. There is a paucity of data concerning the effect of the MVA procedure on the fertility desire of women post-MVA and as such, this study endeavoured to explore the fertility desire of women following this life-saving procedure. Since incomplete abortions are considered as a proxy for unsafe abortions, understanding the fertility desires will help improve service provision with the aim of reducing unwanted and unplanned pregnancies hence reducing the MMR to less than 100 per 100,000 live births as targeted in the NHSP by 2021.

METHODS

An unmatched case control study design with women who had undergone an MVA procedure for management of incomplete abortion enrolled into the study while the controls were sampled from pregnant women attending antenatal clinic at gestation below age of viability (28 weeks). Systematic random sampling was used to select participants. Data was collected using structured investigator-administered questionnaires and the data was analysed using Statistical Package for Social Sciences (SPSS) version 22.

Association between categorical variables was studied using chi square. Binary Logistic regression and multivariate regression to study the effect of various factors in the cases and the controls was also done. Measure of occurrence was odds while measure of effect was the odds ratio. P value of < 0.05 at 95% confidence interval was considered statistically significant.

Results were presented as tables, figures and/or models as was deemed fit.

RESULTS

During the period under study between November 2016 and December 2017, the data collected from the registers in the gynaecology emergency ward at

UTH showed 5378 abortions were attended to, with 2452 (45.6%) being incomplete abortions requiring MVA for management.

Of the women who underwent an MVA procedure, 56(39.7%) described the pain as severe, 35(24.8%) said the pain was moderate, 44(31.2%) described the pain as mild, while the remaining 6(4.3%) said they did not experience any pain.

When asked if the women would want the procedure again if needed, 89(62.7%) said they would have the procedure while 53(37.3%) said they would not want to have the procedure performed on them.

Majority of the women 116(81.7%) would recommend the procedure to other women who needed the procedure while 26(18.3%) said they would not recommend the procedure to other women.

Women post-MVA, 90 (67.7%) preferred to wait for more than two years before the next pregnancy while 45 (32.3%) wanted to wait less than two years to try for another pregnancy.

The study showed that among cases, 74(52.1%) of the women chose short acting methods of contraception, 24(16.9%) chose long acting reversible contraceptive methods and 44(31.0%) did not choose any family planning method.

These figures correlate with the numbers of abortions and incomplete abortions seen in the preceding years 2016, 2015 and 2014.

In 2014, there were a total of 7,564 abortions of which 3,704 (49%) were incomplete abortions in comparison with 2015 and 2016, when there were 2902 (49.7%) and 3230 (49.4%) incomplete abortions respectively. The numbers of MVA procedures performed were 4,070 (53.8%), 4,040 (69.2%) and 3631(55.5 %) for the years 2014, 2015 and 2016 respectively.

Table 1: Relationship between Demographic factors and preferred birth interval

| | Control | | Cases | | P |
|-----------------------------|---------|-------|-------|-------|-------|
| | N | % | n | % | |
| Age | | | | | 0.380 |
| Less than 21 | 16 | 11.3 | 24 | 16.9 | |
| 21 – 35 | 103 | 72.5 | 98 | 69.0 | |
| >35 | 23 | 16.2 | 20 | 14.1 | |
| Total | 142 | 100.0 | 142 | 100.0 | |
| Marital Status | | | | | 0.251 |
| Married | 102 | 71.8 | 92 | 64.8 | |
| Single | 40 | 28.2 | 50 | 35.2 | |
| Total | 142 | 100.0 | 142 | 100.0 | |
| Parity | | | | | 0.444 |
| Low Parity | 140 | 98.6 | 137 | 96.5 | |
| High Parity | 2 | 1.4 | 5 | 3.5 | |
| Total | 142 | 100.0 | 142 | 100.0 | |
| Had Had Miscarriages | | | | | 0.009 |
| No | 90 | 63.4 | 67 | 47.2 | |
| Yes | 52 | 36.6 | 75 | 52.8 | |
| Total | 142 | 100.0 | 142 | 100.0 | |
| Religion | | | | | 0.010 |
| Catholic | 26 | 18.3 | 21 | 14.8 | |
| Adventist | 23 | 16.2 | 24 | 16.9 | |
| Pentecostal | 38 | 26.8 | 44 | 31.0 | |
| Traditional Churches | 32 | 22.5 | 12 | 8.5 | |
| Others | 19 | 13.4 | 33 | 23.2 | |
| None | 4 | 2.8 | 8 | 5.6 | |
| Total | 142 | 100.0 | 142 | 100.0 | |

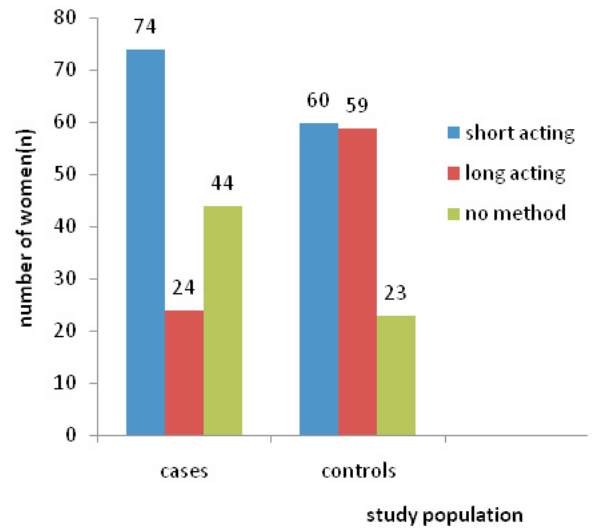
Two variables were statistically significant with their p-values less than the critical point of 0.05. Women who had a miscarriage before (p=0.009) and the type of Religion they belonged to (p=0.010) were significantly associated to a preferred interval for conception.

Table 2: Relationship between socio-economic factors and preferred birth interval

| | Controls | | Cases | | P |
|---|----------|-------|-------|-------|--------|
| | n | % | n | % | |
| Education | | | | | 0.058 |
| No Education | 4 | 2.8 | 6 | 4.2 | |
| Primary | 20 | 14.1 | 35 | 24.6 | |
| Secondary | 67 | 47.2 | 66 | 46.5 | |
| Tertiary | 51 | 35.9 | 35 | 24.6 | |
| Total | 142 | 100.0 | 142 | 100.0 | |
| Employment | | | | | 0.375 |
| Unemployed | 55 | 38.7 | 66 | 46.5 | |
| Employed | 49 | 34.5 | 40 | 28.2 | |
| Self Employed | 38 | 26.8 | 36 | 25.4 | |
| Total | 142 | 100.0 | 142 | 100.0 | |
| Residence | | | | | 0.007 |
| Low Density | 34 | 23.9 | 19 | 13.4 | |
| Medium Density | 55 | 38.7 | 45 | 31.7 | |
| High Density | 53 | 37.3 | 78 | 54.9 | |
| Total | 142 | 100.0 | 142 | 100.0 | |
| What husband does for living | | | | | 0.089 |
| Unemployed | 3 | 2.9 | 6 | 6.6 | |
| Employed | 70 | 68.6 | 49 | 53.8 | |
| Self Employed | 29 | 28.4 | 36 | 39.6 | |
| Total | 102 | 100.0 | 91 | 100.0 | |
| Family Planning Chosen after Counseling | | | | | <0.001 |
| Long lasting | 59 | 41.5 | 24 | 16.9 | |
| Short lasting | 60 | 42.3 | 74 | 52.1 | |
| Nothing | 23 | 16.2 | 44 | 31.0 | |
| Total | 142 | 100.0 | 142 | 100.0 | |
| Had Already Started Antenatal | | | | | <0.001 |
| Yes | 3 | 2.1 | 102 | 71.8 | |
| No | 138 | 97.9 | 40 | 28.2 | |
| Total | 141 | 100.0 | 142 | 100.0 | |
| Would Like To have Another Child | | | | | <0.001 |
| No | 31 | 21.8 | 8 | 5.6 | |
| Yes | 106 | 74.6 | 124 | 87.3 | |
| Not sure | 5 | 3.5 | 10 | 7.0 | |
| Total | 142 | 100.0 | 142 | 100.0 | |
| How Long After MVA/preg Would Like Another Child | | | | | <0.001 |
| Less than 2 years | 11 | 9.9 | 43 | 32.3 | |
| 2 years or more | 100 | 90.1 | 90 | 67.7 | |
| Total | 111 | 100.0 | 133 | 100.0 | |

Socioeconomic factors that significantly affected the choice of interval for conception at 95% confidence interval and p-value <0.05 included residence (p=0.007), whether a family planning method was chosen after counseling (p<0.001), had already started antenatal (p<0.001), and how long after MVA/pregnancy she would like another child (p<0.001).

Graph 1: Showing contraceptive method choices



DISCUSSION

The study found two factors that were statistically significant and associated to future fertility desires of a woman. Exposure to MVA procedure for management of incomplete abortion and having started attending antenatal clinic were the two significant factors with p<0.001 at 95% confidence interval and after adjusting for demographic and socioeconomic factors. A woman who had undergone an MVA was 5.6 times more likely to want to wait two or more years before the next pregnancy with having started antenatal clinic being 128 times more likely to desire a two or more year birth interval. Other significant factors that showed association included residential area for the women, their religion, having had a miscarriage before and use of modern methods of family planning after counselling post-MVA procedure.

There was a significant association between undergoing an MVA procedure for managing an incomplete abortion and the preferred birth interval. A negative relationship between the satisfaction and the preferred birth interval was found with majority of women who experienced an MVA procedure being influenced to choose a longer birth interval. The women cited the pain experienced during the procedure as the major influencer. Majority rated the pain as moderate and severe despite most of them having been given paracervical block (local anaesthesia). More than half said would return for the procedure if need arose partly because that was the only option of treatment availed to them and as such had no choice. Patients said they would recommend the procedure to other women as it was relatively quick and effective. The environment, counseling and interaction with the staff was mostly acceptable with the majority of women. The counseling offered to these women was acceptable to almost all the women and they felt comfortable to seek clarification when they did not understand. The environment where the procedure was being done was satisfactory to most of the women though a few felt the room was dirty, with no privacy as people were walking in and out of the room. Patients who reported the pain as being severe did not receive any form of analgesia for whatever reason and would not want the procedure performed on them again. They also said that they would not recommend it to another woman. All the women complained of waiting for a long time after the procedure to have the counseling and family planning offered to them. This could also have a negative impact on their choice of family planning method as most would opt for the short acting methods that are much quicker to administer as opposed to the LARCs, which require a little more time, further reducing the uptake of LARCs. As most of the short acting methods are user dependent, this would increase the rate of repeat abortions as most women could not continue the family planning and end up pregnant in a shorter interval than preferred, mostly unwanted pregnancy that may end up in termination.

These findings were consistent with the study by Baqai and Waheed (2016) in Pakistan which found that MVA was generally well accepted by patients and had very low emotional and physical complications. MVA procedure was effective and safe but patients reported higher pain scores compared to patients who received misoprostol for treatment of incomplete abortion (Bique et al. 2007). In a study where satisfaction was compared in two groups in which MVA was done either as an office procedure or theatre, it was found that satisfaction was high in both but underestimation of the procedure's discomfort was negatively associated with satisfaction (Dalton et al. 2006).

The majority of women chose short acting family planning methods as opposed to the long acting reversible contraceptives (LARC) despite many preferring a longer birth interval post-MVA or postpartum. Short acting family planning methods have a high failure rate compared to LARCs hence could also explain the high abortion cases. The women shunned the IUCD due to different myths in the community while some did not want the implants because they did not want a surgical procedure after going through the MVA. These findings are consistent with a study done in Brazil by Ferreira et al (2010) which found the majority of post-abortal women choosing the injectable contraceptives, oral contraceptives and condoms in that order and only one woman chose the IUCD. A study conducted in eight African and Asian countries from 2011 to 2013 also found that the uptake of contraception was high when offered immediately after treatment for an abortion as part of Post abortion care (PAC), though the uptake of long acting reversible contraception (LARC) was still low (Benson et al. 2016). Short acting methods of contraceptives are the most widely used methods in Zambia with injectable being the most popular followed by the pill and only a few use the implants (ZDHS 2014). Though the women have a reproductive right to choice of a contraceptive, there is need for sensitization by health workers on

effectiveness and benefits of using LARC and in turn promoting maternal and child health towards 2030.

The study found that women with at least secondary school education are more likely to wait at least two or more years between births as compared to women with no education or primary education. These results concur with a study by Cleland (2007) which found that there was a negative correlation between education and fertility preferences. Curtis and Blanc (1997) found that schooling was related to one crucially important element of contraceptive behaviour, which is the propensity to switch to another method after abandoning an earlier one. According to Cleland (2007), the use of contraception is the dominant behavioural pathway that links education to fertility and that contraceptive use rose monotonically and steeply across schooling categories. Fertility survey by Weinberger (1987) showed an overall pattern of decreasing fertility with increasing education and that in 40% of the countries, women with five or more years of schooling have only half of current fertility of women with no education.

Among the socio-economic factors studied, residence, which was described as belonging to low, medium or high-density area, was statistically significant and showed association in predicting the fertility desires of the women. Compared to rural areas, urban environments that are less densely populated offer the residences more varied opportunities in terms of delivery and education for their children and are associated with cultural diversity and openness to new ideas (Joseph & Garenne, 2002).

CONCLUSION AND RECOMMENDATIONS

The study showed that exposure to manual vacuum aspiration procedure significantly affected the fertility desire of the woman. Women post-MVA would like to delay conceiving up to 2 years or more though most of them chose short acting

contraceptive methods. Other significant predictors among others included having had a miscarriage before, early booking for antenatal and use of modern methods of family planning. Abortions are common at University Teaching Hospital with almost half of them being incomplete abortions and managed with MVA procedure. Strengthening provision and access to effective contraceptives (LARC methods) in the immediate post-MVA period would prevent unwanted and unintended pregnancies hence promoting maternal and child health. Effective contraceptives also aid women to have children by choice hence contributing to the country's effort to attain the Sustainable Development Goal (SDG) on maternal health by 2030. Improved pain management, preferably sedation for the MVA procedure would significantly improve the acceptability for the procedure. There is need for advocacy by health workers on safe and legal termination of pregnancy and comprehensive abortion care in Zambia if the country is to attain the SDG on maternal health.

ACKNOWLEDGEMENTS

1. Professor Bellington Vwalika- my supervisor for my MMed dissertation for his guidance and support
2. Ms. Scholastica Nkonde- for assisting in the data collection
3. The women who participated in the study, without whom this work would not have been possible

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